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# **Tropical Medicine**

**A Current Awareness Bulletin**

**January 1986**



**British Deputy High Commission**  
British Council Division  
737 Anna Salai  
MADRAS 600 002





BRITISH DEPUTY HIGH COMMISSION  
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TROPICAL MEDICINE

JANUARY 1986

A Quarterly Current Awareness Bulletin for medical practitioners and research workers in Tropical Medicine

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JANUARY 1955

TROPICAL MEDICINE

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Published for the British Medical Association

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NEWS

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PERIODICAL ARTICLES

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## NEWS

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### IMMUNISATIONS SAVE 800 000 INFANTS' LIVES

An estimated 800 000 infants' lives are saved each year in developing countries by immunisations against six childhood diseases-polio-myelitis, diphtheria, pertussis, tetanus, measles, and tuberculosis-according to data available to the World Health Organisation. An expanded programme on immunisation was launched by the WHO in 1974 against these six diseases, and over the past 10 years the number of immunisations has increased eightfold. Despite these successes, however, an estimated 265 000 cases of poliomyelitis, two million deaths from measles, and 600 000 deaths from pertussis still occur each year in the developing world.

<>British Medical Journal, 28 September 1985<>

### CAMPAIGN AGAINST WHOOPING COUGH

Becky, who is 11 months old, appears on television screens throughout Britain considerably distressed by a fit of coughing. This advertisement is part of a campaign designed to show parents how ill small children with whooping cough can be.

Epidemics of the disease occur roughly every four years, and the next one is expected to start late in 1985 and continue into 1986 and early 1987. In an attempt to lessen its impact the Health Education Council is launching a campaign to promote immunisation. This is backed with special funds from the Department of Health and Social Security.

The television advertisement, together with a booklet and poster, suggests that whooping cough is preventable, and that immunisation is much less risky than the disease. The booklet 'Whooping Cough: What you need to know' is available from Whooping Cough Campaign, PO Box 767, London SE99 6YE.

<>British Medical Journal, 28 September 1985<>

### NEW APPROACHES IN THE CONTROL OF MALARIA

The WHO expert committee on malaria, which concluded its work in Geneva has warned of the increasing deterioration in the global control of malaria unless new measures are adopted. The expert committee emphasised the importance of an epidemiological approach to malaria control, taking into account not only local variability in disease intensity but also its response to control measures. Two approaches were identified: the provision of diagnosis and treatment, prophylaxis throughout pregnancy, and improved education of the public; and planned interference in malaria transmission.

Appropriate strategies, control measures, evaluation of results, parasite resistance to drugs or vector resistance to insecticides, and the development of control activities within the framework of local primary health care must also be taken into consideration. The committee also recommended training health workers not only to take the appropriate measures, but also to educate and stimulate the community into contributing towards the necessary resources for malaria control.

<>The Lancet, 5 October 1985<>

## PROMOTION OF CHILD HEALTH IN DEVELOPING COUNTRIES

Britain should provide more aid for primary health care than for technical and specialised aspects of health, which it has concentrated on in the past, said Mr Timothy Raison, Minister for Overseas Development, at the second International Conference of Nursing in Child Health, London. About 17 million children die each year from the combined effects of poor nutrition, diarrhoea, malaria, pneumonia, measles, whooping cough, and tetanus. Virtually all of these deaths occur in the developing world and, said Mr Raison, between half and two thirds could be prevented by simple measures. For improvements in their health care, however, developing countries need foreign exchange and trained manpower.

Britain's programme of aid consists of two basic elements. Firstly, contributions to multilateral assistance programmes, such as the United Nations Development Programme, and, secondly, direct help for selected projects-it is this type of help that Mr Raison said should be, and is being, redirected towards primary health care. An example of a new project with a strong primary health care basis is in the state of Orissa in India, where the Overseas Development Administration has provided nearly £11m for rural health and welfare services for a population of 13 million.

<>British Medical Journal, 5 October 1985<>

## PRINCESS ANNE INAUGURATES NEW REHABILITATION COURSE FOR DEVELOPING COUNTRIES

Her Royal Highness, Princess Anne, Chancellor of the University of London, visited the Institute of Child Health to inaugurate a new course for trainers and supervisors of community rehabilitation workers in developing countries. The course aims at training students to encourage disabled people in their communities in parts of central Africa, Malaysia, and India to meet their own needs in the cheapest possible way, which means using available resources. The nine month course has received money from the Nuffield Foundation and Save the Children Fund (£10 000) to get it started, but the 12 students have had to find their own sponsors, including, Mencap,

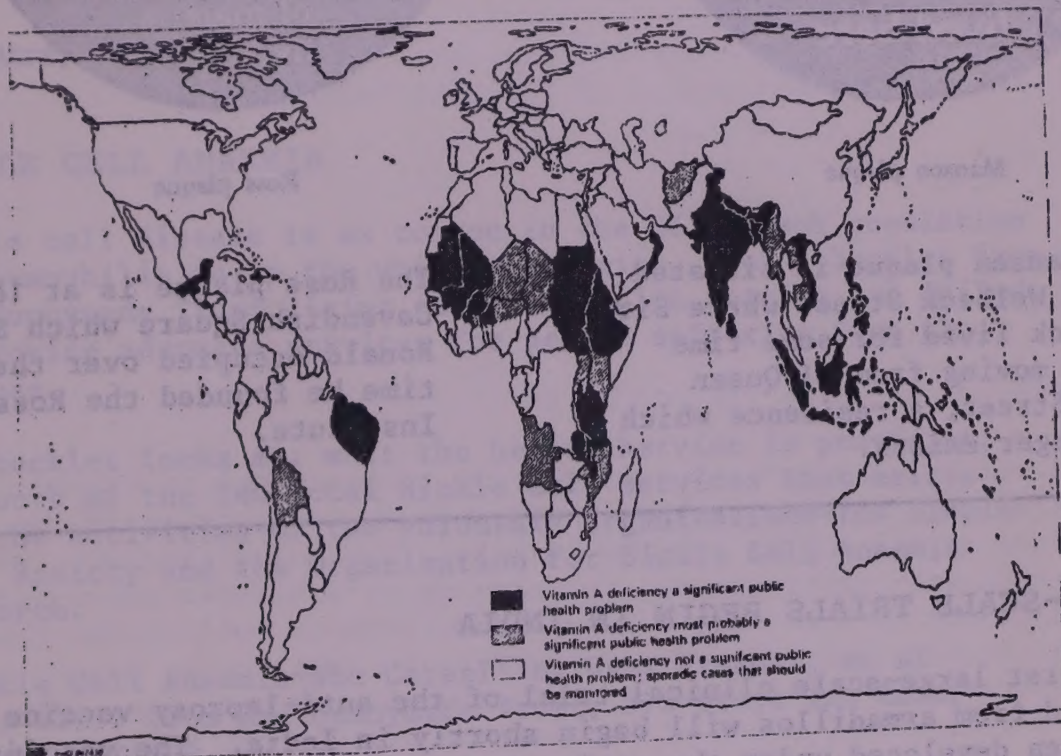
UNICEF, the British Council, and the Salvation Army.

For further information contact Shane O'Brien, Institute of Child Health, 30 Guildford Street, London WC1N 1EH.

<>British Medical Journal, 19 October 1985<>

### THE SIMPLE SOLUTION FOR VITAMIN DEFICIENCY

Over half a million children lose their sight every year through vitamin A deficiency, yet for the World Health Organisation to reverse this tragedy will cost only \$5m a year. Two thirds of the children who lose their sight die within a few weeks; another six to seven million who have mild vitamin A deficiency are more vulnerable to infection. The map shows the countries most affected.



People can get enough vitamin A in their diet by eating dark green or yellow fruits and vegetables. The irony is therefore that vitamin A is abundant throughout the warm countries, where vitamin A deficiency is most common.

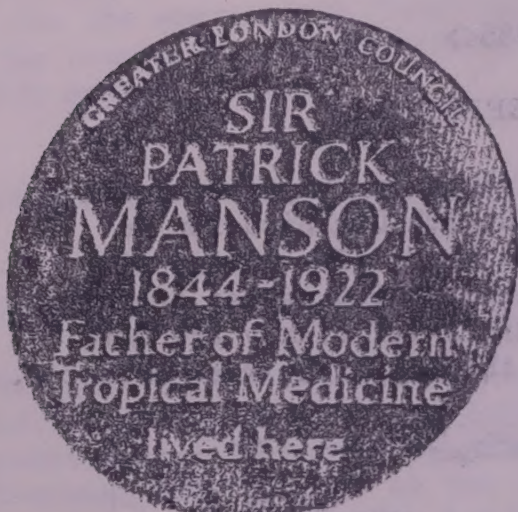
The WHO programme will begin by assessing the prevalence and severity of vitamin A deficiency; then prevent it through nutritional education and by distribution of vitamin A capsules or food fortification in areas where prevalence is high; treat those with the disease; train health workers in prevention, detection, and control; and investigate programme problems. The programme will begin late in 1985 and run for at least 10 years.

<>British Medical Journal, 19 October 1985<>

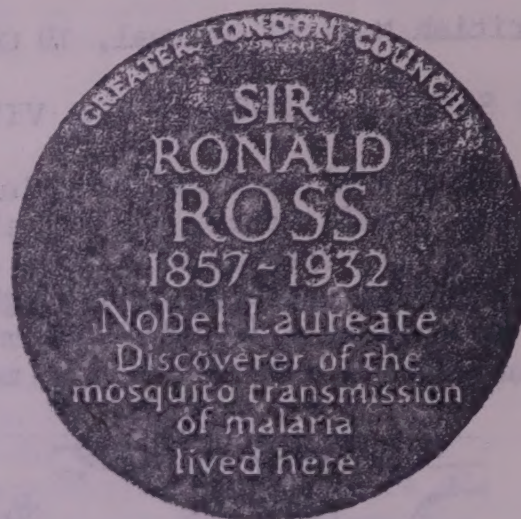
<>New Scientist, 17 October 1985<>

## MANSON AND ROSS COMMEMORATION PLAQUES

On February 11, 1985, plaques were unveiled by courtesy of the Greater London Council to commemorate the contributions to Tropical Medicine of Sir Patrick Manson and Sir Ronald Ross.



Manson plaque



Ross plaque

The Manson plaque is situated at 50 Welbeck Street where Sir Patrick lived for some time after moving from 21 Queen Anne Street, a residence which no longer exists.

The Ross plaque is at 18 Cavendish Square which Sir Ronald occupied over the time he founded the Ross Institute.

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## LARGE-SCALE TRIALS BEGIN IN INDIA

The first large-scale clinical trial of the anti-leprosy vaccine derived from armadillos will begin shortly in India. The vaccine has been developed under the aegis of the World Health Organisation (WHO), but the Indian trial is being mounted by the Indian Council for Medical Research (ICMR). This international project will thus take place soon after the clinical trial of the Indian anti-leprosy vaccine developed at the Cancer Research Institute.

The trial of the WHO vaccine will be mounted, once the Drug Controller of India has given formal clearance, in the Chingleput district of Tamil Nadu in South India. Both leprosy and tuberculosis are endemic among the 4 million people living there. The director-general of ICMR, Dr V Ramalingaswami, says that the council's Jalma Institute of Leprosy will be responsible for planning and carrying out the trial. It is believed that ICMR will import the Mycobacterium leprae harvested from armadillos and set up processing facilities in India using the WHO technology. Meanwhile, vaccine for the Chingleput trial will be supplied by Burroughs Wellcome of Britain. ICMR has been under pressure to test the WHO vaccine and had to choose between that and an Indian vaccine which

has already completed phase-I trial and been given clearance from the toxicology angle by the Drug Controller.

ICMR had decided to try both vaccines. A trial of the vaccine developed by the Cancer Research Institute (CRI) in Bombay has begun at Wardha in Central India. This vaccine is made from gamma-ray-inactivated cultivable mycobacterium (belonging to the M.avium group) isolated from human leproma and showing extensive cross-reactivity with M.leprae. The number of people to be vaccinated in Wardha will be the same as in Chingleput. But the CRI vaccine will be given to leprosy patients as well as to contacts, for the phase I trial showed therapeutic potential as well as prophylactic effect. It will be several years before the results of the two trials are known, so chemotherapy will continue to be the main plank for achieving India's goal of eradicating leprosy by the year 2000.

<>Nature, 24 October 1985<>

### SICKLE CELL ANAEMIA

Sickle cell disease is as common in the UK's black population as haemophilia is in the white population. Yet a booklet from the Runnymede Trust claims that the health service has failed to provide adequate services for people suffering from the disease.

The booklet looks at: what the health service is providing, the work of the few local Sickle Cell services that exist; and the activities of two voluntary organisations-the Sickle Cell Society and the Organisation for Sickle Cell Anaemia Research.

'Sickle Cell Anaemia-Who Cares?' by Usha Prashar, et al costs £2.30 from The Runnymede Trust, 37a Grays Inn Road, London WC1X 8PP.

<>New Society, 25 October 1985<>

### LEAD POISONING FROM SURMA

Surma-used by some Asian parents to put on children's eyelids and in the eyes-may contain up to 80% lead. Where use causes irritation to the eye, the child may rub the area, transferring the lead rich substance to his fingers and later to his mouth. The lead ingestion which is thus inadvertently caused may be chronic, and cause lead poisoning. The chemical hazards section of the Department of Trade and Industry is relaunching a campaign to persuade Asian parents to get their surma tested for lead by the environmental health officer, via the health visitor. The campaign is not to stop the traditional use of the product but to persuade parents to switch to lead free surma.

<>British Medical Journal, 2 November 1985<>

## FELLOWSHIP OF THE ROYAL SOCIETY OF TROPICAL MEDICINE AND HYGIENE

All registered medical and veterinary practitioners, nurses and others interested in scientific pursuits relating to tropical medicine, whose qualifications are deemed satisfactory by the Council, are eligible for election as Fellows of the Society.

The annual subscription payable is £25.

The Transactions and the current Year Book of the Society are posted regularly, by Accelerated Surface Post, to every Fellow whose subscription is not in arrear.

Further information may be obtainable from:

The Honorary Secretaries  
Royal Society of Tropical Medicine  
and Hygiene  
Manson House  
26 Portland Street  
London W1N 4EY

## IMPORTED MALARIA IN BRITAIN

In a recent study of imported malaria in Brent health district none of the patients had taken adequate chemoprophylaxis\* the failure of travellers to seek advice is the chief problem. Many patients were Asian Indians who grew up in malarious zones and were immune at that time. These travellers do not realise that after living in Britain for several years they are no longer immune and therefore need to take prophylactic measures. The GPs were well aware of the problem of imported malaria and competent in dealing with it, but several pointed out that chemoprophylaxis to be taken outside the UK is not prescribable through the NHS, which transfers more responsibility to the traveller and further lowers the likelihood of adequate prophylaxis.

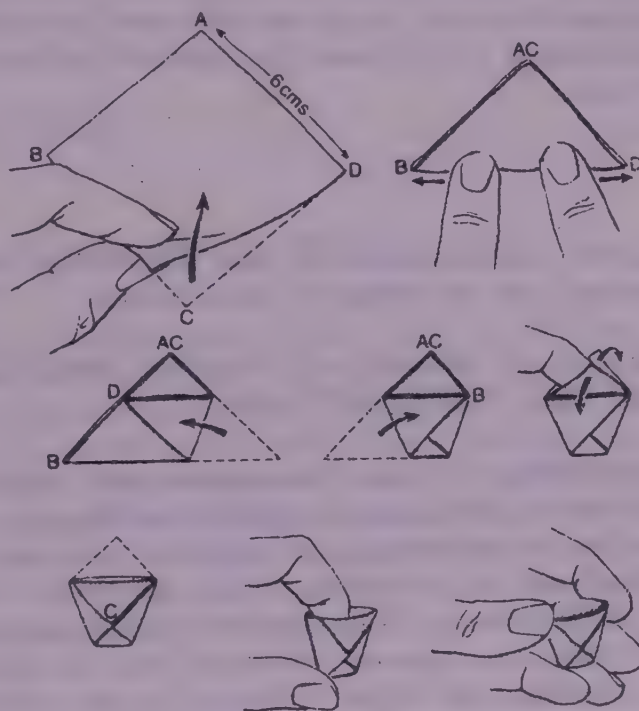
\*[ Cohen, DL, et al - Malaria in Brent: Successful treatment in the community. Lancet 1984;i;1006-8 ]

<>British Medical Journal, 16 November 1985<>

## ORIGAMI AND ORAL REHYDRATION

A wide variety of methods has been suggested to measure the appropriate quantities of salt and sugar for oral rehydration. These include a two-ended spoon, a piece of wood and two holes in it, and versions made from bottle tops and local spoons.

Beverley Young of the British Council, who is involved with the CHILD-to-Child programme and is presently writing a health education text for primary school teachers in developing countries, was concerned to find a simple way to present the idea in the classroom, to make it more "teachable". When his 12-year-old son who had an interest in Origami was presented with the problem, he went away and returned with a paper cup. For the sugar, a piece of paper 6 cm square is needed; for the salt, an equivalent piece 3 cm square. It is made as shown in the figure.



The cups need to be opened so that they will hold the maximum amount of salt and sugar. The salt and sugar should be level with the top of the cup and not heaped. To check that the container for the drink is the right volume, a cup made from paper 20cm square can be used. Two of these made a suitable volume of 200 to 250 ml.

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## PERIODICAL ARTICLES

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### 1. GENERAL

ANDERSON, RM

Age-related changes in the rate of disease transmission:  
implications for the design of vaccination programmes

Journal of Hygiene (1985), Vol. 94(3), p365-436

Mathematical models are developed to aid in the investigation of the implications of heterogeneity in contact with infection within a community, on the design of mass vaccination programmes for the control of childhood viral and bacterial infections in developed countries. Analyses are focused on age-dependency in the rate at which individuals acquire infection, the question of 'who acquires infection from whom', and the implications of genetic variability in susceptibility to infection. Throughout, theoretical predictions are based on parameter estimates obtained from epidemiological studies and are compared with observed temporal trends in disease incidence and age-stratified serological profiles.

CANDY, D C A

New enteric vaccines: application of new knowledge of  
receptors and recognition in enteric infections

Transactions of the Royal Society of Tropical Medicine  
and Hygiene (1985), Vol. 79(5), p577-580

Advances in understanding of the "receptors and recognition" mechanisms of virulence factors of enteric pathogens have been important in the development of enteric vaccines. Sophisticated techniques of molecular biology have proved essential to this endeavour. This review summarizes progress in development of vaccines against disease due to *Vibrio cholerae*, *Escherichia coli*, *Salmonella typhi*, *Shigella* and rotavirus enteric infections. All of these vaccines are undergoing, or are about to undergo, field trials.

### PHOTOCOPIES

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° Anyone requesting a photocopy from this bulletin must fill in the declaration form which is inserted

° Copyright law forbids photocopying of the entire journal

## 2. NON-INFECTIVE DISEASES

### 2.1 PORPHYRIA

McCOLL, K E L, et al

Chester Porphyria: Biochemical studies of a new form of Acute Porphyria

The Lancet, 12 October 1985, p796-799

A previously unrecognised form of acute porphyria has been identified in a large family in Chester, UK. Patients presented with attacks of neurovisceral dysfunction and none had experienced cutaneous photosensitivity. Biochemically, the excretion pattern of haem precursors varied between individuals. Studies of the enzymes of haem biosynthesis in peripheral blood cells showed a dual enzyme deficiency, with reduced activity of both porphobilinogen deaminase, as seen in acute intermittent porphyria, and protoporphyrinogen oxidase, as seen in variegate porphyria. The genetic basis of this dual form of acute porphyria and its relations to the other acute porphyrias are not clear.

### 2.2 CROHN'S DISEASE

GLASS, RE

The management of internal fistulae in Crohn's disease

British Journal of Surgery (1985), Vol.72, Suppl. pS93-S95

It is often considered that the presence of an internal fistula in patients with Crohn's disease is an indication for surgery and especially in cases with a fistula involving the bladder. Such a policy has not necessarily been followed at St. Mark's Hospital and this is perhaps particularly so in asymptomatic patients with a fistula that involves the rectum when effective surgical treatment would result in a permanent stoma.

HARRIES, AD and RHODES, J

Efficiency of anthropometric indicators in the assessment of protein nutrition in Crohn's Disease

Human Nutrition: Clinical Nutrition (1985), Vol. 39C(2), p155-158

A comparison was made of the efficiency of different anthropometric indicators in assessing serum albumin and prealbumin concentrations in 60 adult patients with Crohn's disease. Indicators included weight, mid-arm circumference and triceps skinfold thickness at different cut-off points of reference and at the 5th percentile. Mid-arm circumference at 90 per cent reference gave the most significant separation of serum albumin and prealbumin. Mid-arm circumference is a simple and reproducible measurement, and the results support the suggestions that it is a useful indicator for assessing protein nutrition in Crohn's disease.

MCINTYRE, PB

The short bowel

British Journal of Surgery, (1985), Vol.72, Suppl., pS92-S93

The major features of the short bowel syndrome are diarrhoea, malnutrition and weight loss. Many patients can derive considerable benefit from the correct use of oral electrolyte replacements, and dietary manipulation and supplements.

RITCHIE, JK

Crohn's disease in young people

British Journal of Surgery (1985), Vol.72, Suppl. pS90-S91

Epidemiological data show a low incidence of Crohn's disease in the first decade of life rising steeply in the second to a peak in the third and declining slowly thereafter. However, since most studies show an increasing incidence of Crohn's disease over the last 20 years, it is not surprising that clinicians are now reporting series of young patients.

SANDERSON, IR and WALKER-SMITH, JA

Crohn's disease in childhood

British Journal of Surgery (1985), Vol.72, Suppl., pS87-S89

Crohn's disease is being recognized with increasing frequency in paediatric practice in the United Kingdom. Its clinical features are similar to those found in adults except delayed growth and pubertal developmental are most important manifestations in childhood. The application of strict diagnostic criteria are essential for diagnostic precision. Management is to induce a remission, ideally in such a way as to ensure satisfactory growth.

SHEPHERD, A F I, et al

The surgical treatment of gastroduodenal Crohn's disease

Annals of the Royal College of Surgeons of England (1985), Vol. 67(5), p382-4

Crohn's disease can affect any part of the gastrointestinal tract. Gastroduodenal involvement is uncommon and was not recognised until 1949. Since then approximately 200 cases have been described in several series in the world literature. This paper describes the clinical presentation and surgical management of ten patients treated in the Birmingham General Hospital between 1970 and 1984.

### 3. DISEASES CAUSED BY PROTOZOA

#### 3.1 MALARIA

BRADLEY-MOORE, AM, et al

A comparison of chloroquine and pyrimethamine as malaria chemoprophylactics in young Nigerian children

Transactions of the Royal Society of Tropical Medicine and Hygiene (1985), Vol.79(5), p722-727

The efficiency of chloroquine and pyrimethamine as malaria chemoprophylactics was investigated in young Nigerian children. Chloroquine resistance had not been documented in the study area; pyrimethamine resistance was probably present but uncommon. Children who received weekly chemoprophylaxis with pyrimethamine had a lower prevalence of malaria parasitaemia and malaria antibodies than children who received weekly chemoprophylaxis with chloroquine. Pyrimethamine given monthly gave a comparable degree of protection to chloroquine given weekly. Chloroquine frequently induced vomiting in young children and this may have impaired its efficacy as a prophylactic. We conclude that, in an area where neither chloroquine nor pyrimethamine resistance is prevalent, pyrimethamine is a better chemoprophylactic for young children than chloroquine.

BRUCE-CHWATT, LJ

Recent trends of chemotherapy and vaccination against malaria: new lamps for old

British Medical Journal, 19 October 1985, p1072-1076

In 1969 the World Health Organisation recognised that global eradication of malaria was not attainable for technical, administrative, socioeconomic, political, and other reasons. Its new, more flexible strategy of malaria control put the emphasis on closer collaboration with basic health services in urban and rural areas, including the wider use of anti-malarial drugs for treatment of the disease and for its prevention.

HOLDER, AA, et al

Primary structure of the precursor to the three major surface antigens of Plasmodium falciparum merozoites

Nature, 19 September 1985, p270-273

Recently, a class of protein antigens of high relative molecular mass which can induce protective immunity against blood-stage malaria has been identified. Three studies describing the isolation of single short complementary DNA clones for part of the P195 gene sequence have been reported. Here we describe

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the complete structure of the P195 gene determined from further DNA clones, its organization within genomic DNA and the location of the specific processing fragments within the primary amino-acid sequence.

SINDEN, RE

A cell biologist's view of host cell recognition and invasion by malarial parasites

Transactions of the Royal Society of Tropical Medicine and Hygiene (1985), Vol. 79(5), p598-605

The migration of various Apicomplexan parasites through host cells and tissues is examined. Two approaches are taken. First a comparative examination of the invasive stages from an ultra-structural and biochemical viewpoint. Second a critical review of the mechanism of recognition and invasion of host cells. Whilst appreciating the very specific nature of host cell recognition and invasion in some parasite stages, a marked contrast is observed in the ability of other stages of the malarial life-cycle (sporozoite and ookinete) to invade, migrate through, and escape from varied types of host cell. It is speculated that receptors are required for the induction of a parasitophorous vacuole (and thus host cell survival), whereas receptors are of little relevance when the membrane and host cell are directly ruptured.

### 3.2 TYPANOSOMIASIS

ALLSOPP, R, et al

Fatal attraction for the tsetse fly

New Scientist, 7 November 1985, p0-43

Traps impregnated with insecticides and essence of ox, combined with sophisticated spraying technology, may at last rid Africa of the tsetse without wreaking havoc on the environment.

GIBSON, WC and WELLDE, BT

Characterization of Trypanozoon stocks from the South Nyanza sleeping sickness focus in Western Kenya

Transactions of the Royal Society of Tropical Medicine and Hygiene (1985), Vol.79(5), p671-676

220 Trypanosoma (Trypanozoon) brucei sp, stocks isolated between 1969 and 1983 from the Lambwe valley sleeping sickness focus in South Nyanza, Western Kenya, were characterized by isoenzyme electrophoresis using 12 enzymes. 12 different zymodemes of T. (T.) b. rhodesiense were isolated from patients during the 13-year period and identical stocks were also found in cattle, reedbuck (Redunca redunca) and tsetse (Glossina pallidipes). Sleeping sickness in Lambwe valley is unlikely to have been introduced from elsewhere, since T. (T.) b. rhodesiense stocks

isolated from the valley were different from those from neighboring epidemic areas. Alternatively, the recent outbreak may have been caused by the increased transmission associated with an expanding tsetse population. The possibility that genetic exchange contributed to the biochemical diversity of the trypanosomes examined is discussed.

SCHECHTER, M, et al

Further evaluation of lectin affinity purified glycoprotein (GP90) in the enzyme linked immunosorbent assay (ELISA) for diagnosis of *Trypanosoma cruzi* infection

Transactions of the Royal Society of Tropical Medicine and Hygiene (1985), Vol.79(5), p637-640

Sera from 143 patients considered to be infected with *Trypanosoma cruzi* on the basis of epidemiological, clinical and standard serological evidence gave positive results in the enzyme-linked immunosorbent assay (ELISA) using a lectin affinity purified 90,000 molecular weight glycoprotein (GP90) antigen preparation. Levels of antibody did not discriminate between clinically classified groups of patients in the chronic phase of infection. The GP90 preparation was found to be heterogeneous.

SNARY, D

Receptors and recognition mechanisms of *Trypanosoma cruzi*

Transactions of the Royal Society of Tropical Medicine and Hygiene (1985), Vol. 79(5), p587-590

The current state of knowledge on receptor and recognition interactions which take place during the life-cycle of *Trypanosoma cruzi* is reviewed. Evidence suggests that carbohydrate plays a central role in these recognition mechanisms. Lectin-sugar interactions appear to be involved in uptake of the parasite by host cells including macrophages and a protein on the surface of trypomastigote which binds N-acetyl glucosamine on the host cell has been implicated in host cell invasion. Sugars on a 72,000 molecular weight glycoprotein on epimastigotes have also been implicated in colonization of the gut of the insect vector and in control of the morphological changes which take place in the insect gut.

### 3.3 LEISHMANIASIS

BLACKWELL, JM

Receptors and recognition mechanisms of *Leishmania* species

Transactions of the Royal Society of Tropical Medicine and Hygiene (1985), Vol.79(5), p606-612

During their life-cycle *Leishmania* parasites live extracellularly

in the lumen of the sandfly gut and intracellularly in the cells of the vertebrate host's mononuclear phagocyte system. In both cases recognition processes involving receptor/ligand interactions are important determinants of parasite survival.

### 3.4 AMOEBIASIS

ANAND, BS, et al

Experimental amoebiasis in the guinea-pig: sequential histological abnormalities following intracaecal injection of *Entamoeba histolytica*

Transactions of the Royal Society of Tropical Medicine and Hygiene (1985), Vol.79(5), p626-630

The histological abnormalities of amoebic colitis have been well described but their evolution over a period of time has not been clearly examined. There was considerable variation in the type of histological abnormality seen on different days of the experiment, there was a definite pattern of evolution. The presence of cellular infiltrate in the lamina propria in the absence of trophozoites and damage to the surface epithelium, suggests that these abnormalities are not the direct effect of amoebae. It is suggested that the initial damage is caused by an enterotoxin; the trophozoites enter the mucosa only when there is a break in the surface epithelium. Once within the tissues, trophozoites aggravate the damage by their ability to phagocytose and to release cytotoxic enzymes.

GILL, NJ, et al

Lymphocyte subpopulations transformation studies in an experimental model of intestinal and hepatic amoebiasis

Transactions of the Royal Society of Tropical Medicine and Hygiene (1985), Vol.79(5), p618-623

The lymphocyte subpopulations in peripheral blood and blast transformation were studied on days 0, 3, 7, 11, 15, 20 and 35 after infection in progesterone-treated guinea-pigs which had been experimentally infected with *Entamoeba histolytica* by intracaecal inoculation. The study has shown that in hepatic amoebiasis there is highly significant depression in both number and function of T cells in comparison to intestinal amoebiasis.

### 3.5 GIARDIASIS

ANAND, BS, et al

Experimental examination of the direct damaging effects of *Giardia lamblia* on intestinal mucosal scrapings of mice

Transactions of the Royal Society of Tropical Medicine and Hygiene (1985), Vol.79(5), p613-617

*Giardia lamblia* is known to produce functional and structural derangement of the small intestine but the pathogenesis of this defect is not clear. To examine this, mucosal scrapings from the small intestine of mice were incubated with human *G. lamblia* trophozoites. The integrity of the mucosal cells was assessed by their ability to exclude trypan blue, and by the levels of brush border lactase, sucrase and maltase. The findings suggest that *G. lamblia* causes direct damage to the small intestinal epithelial cells and that this effect is not mediated through factors such as bacterial proliferation, bile salt deconjugation and immunological reactions.

GREEN, EL, et al

Immunodiagnostic detection of giardia antigen in faeces by a rapid visual enzyme-linked immunosorbent assay

The Lancet, 28 September 1985, p691-693

An enzyme-linked immunosorbent assay (ELISA) was developed for the detection of *Giardia* antigen in human faeces. The ELISA sensitivity exceeded 98% and its specificity was 100%, by both colorimetry and direct visual interpretation. The assay could trace the decline and disappearance of antigen in faeces rendered microscopically negative by chemotherapy. This ELISA, which can be completed in less than 3 h and which does not rely on complex equipment for interpretation, should be very useful in diagnostic and epidemiological applications.

## 4. DISEASES CAUSED BY HELMINTHS

### 4.1 FILARIASES

FYFE, N C M and PRICE, E W

The effects of silica on lymph nodes and vessels - a possible mechanism in the pathogenesis of non-filarial endemic elephantiasis

Transactions of the Royal Society of Tropical Medicine and Hygiene (1985), Vol. 79(5), p645-651

Non-filarial tropical elephantiasis, which occurs in certain volcanic areas of the world, has been postulated to be an obstructive lymphopathy due to the fibrogenic effects of silica absorbed through the plantar skin of bare footed people. Animal experiments involving the direct intralymphatic injection of fine silica particles have been carried out in order to

assess the extent to which this substance can engender lymphatic obstruction and to determine its main site of action. Intralymphatic silica provoked an immediate and intense macrophage reaction with later fibrosis both within lymph vessels and to a lesser extent within lymph nodes. Lymphography indicated that the consequent obstruction resulted more from the effects of silica on vessels than on nodes.

#### 4.2 TREMATODE INFECTIONS

PARISE, ER, et al

Basement membrane proteins and type III procollagen  
in murine schistosomiasis

Transactions of the Royal Society of Tropical Medicine  
and Hygiene (1985), Vol. 79(5), p663-670

The livers of female CBA mice were examined 9 to 10 weeks after subcutaneous infection with *Schistosoma mansoni*. Cryostat liver sections and isolated liver cells were examined by indirect immunofluorescence using specific antibodies against basement membrane proteins. Infected animals yielded more than three times the control number of non-parenchymal cells. Studies of cryostat liver sections showed that the schistosomal granulomata contained dense deposits of type III collagen precursor and fibronectin in the distribution of the reticulin fibres but laminin and type IV collagen were conspicuous only in new vessels in the periphery of the granuloma. Isolated liver cells showed fibronectin on their surface.

### 5. DISEASES CAUSED BY VIRUSES

#### 5.1 HEPATITIS

AGARWAL, RK, et al

Acute viral hepatitis, intravascular haemolysis,  
severe hyperbilirubinaemia and renal failure in  
glucose-6-phosphate dehydrogenase deficient patients

Postgraduate Medical Journal (1985), Vol. 61(721), p971-975

Five patients with acute viral hepatitis developed severe intravascular haemolysis and unusually high levels of serum bilirubin (427 to 1368  $\mu\text{mol/l}$ ). All 5 had high fever, marked anaemia, reticulocytosis and neutrophilic leucocytosis. Massive haemolysis in the patients was probably induced by the administration of chloroquine and other drugs. Intravascular haemolysis should be suspected in patients with acute viral hepatitis, if they show unexplained anaemia and very high serum bilirubin levels, and measures to prevent renal failure should be instituted in such cases.

## 5.2 INFLUENZA

JENNINGS, R, et al

Antibody response and persistence in volunteers following immunization with varying dosages of a trivalent surface antigen influenza virus vaccine

Journal of Hygiene (1985), Vol. 94(1), p87-95

The serum antibody responses and 50% protective levels (PL50) of antibody were determined, using the SRH test, at one and twelve months post-vaccination in a group of student volunteers immunized with one of three dosages of a trivalent surface-antigen influenza virus vaccine, or with placebo. The results are discussed in relation to the vaccine dosage used and the nature of the population immunized.

McQUILLIN, J, et al

Monoclonal antibodies for the rapid diagnosis of influenza A and B virus infections by immunofluorescence

The Lancet, 26 October 1985, p911-914

Influenza A antibodies were directed against nucleoprotein or matrix protein antigens and influenza B antibodies against nucleoprotein and haemagglutinin antigens. The influenza A anti-matrix monoclonal antibody was found to give a strong intranuclear particulate fluorescence in normal babcon kidney cells and cells from nasopharyngeal secretions negative for influenza A virus, including those from a patient infected with respiratory syncytial virus. Pools of the remaining monoclonal antibodies gave satisfactory results on 25 specimens from patients with influenza A H1N1 and H3N2 subtypes and 12 from patients with influenza B.

PEMBERTON, RM, et al

Morphology and antigenicity studies on reassortant influenza (H3N2) viruses for use in inactivated vaccines

Journal of Hygiene (1985), Vol. 94(2), p229-239

Three influenzaA(H3N2) reassortant whole virus vaccine strains with differing antibody-inducing capacities in hamsters were investigated morphologically and antigenically. The results demonstrate variation between candidate influenza A virus vaccine strains, all possessing the same surface (H3N2) glycoproteins, expressed as a consequence of the reassortant system used for their production.

### 5.3 OTHER VIRUS DISEASES

MILLER, CL, et al

Effect of selective vaccination on rubella susceptibility and infection in pregnancy

British Medical Journal, 16 November 1985, p1398-1401

Selective vaccination has reduced susceptibility to rubella in the childbearing population, but it is suggested that mass vaccination of children of both sexes should be added to the existing policy to control circulation of wild rubella virus and reduce the risk of infection to pregnant women who remain susceptible.

PALMER, SR, et al

An outbreak of shingles?

The Lancet, 16 November 1985, p1108-1111

7 of 101 staff within one department of a large office complex had shingles, within a three-month period. This incidence was significantly greater than that in the remaining workforce. Varicella-zoster-specific IgM antibody was detected in all 4 cases from whom early convalescent serum samples were obtained but in none of 22 controls. Within the index department there was evidence of clustering in time and by work area. A case/control study showed that a recent preceeding illness might have been a risk factor for shingles in the outbreak cases, but not for sporadic cases. This outbreak suggests that shingles can be provoked by re-exposure to varicella-zoster virus.

## 6. DISEASES CAUSED BY BACTERIA

### 6.1 LEPROSY

FFYTCH, TJ

Ocular leprosy

Tropical Doctor, 1985, Vol.15(3), p118-125

An attempt is being made to standardize and interpret data on ocular leprosy; if the WHO estimate of 10.5 million leprosy cases is accepted, at a rough and certainly conservative estimate as many as three-quarters of a million to one million of the world leprosy population are blind.

## 6.2 TUBERCULOSIS

DOBLE, N, et al

Pulmonary Mycobacterium tuberculosis in acquired immune deficiency syndrome

British Medical Journal, 28 September 1985, p849-850

A case of pulmonary infection with Mycobacterium tuberculosis in a patient with the acquired immune deficiency syndrome (AIDS) was studied. Diagnosis of AIDS was confirmed by the finding of pulmonary M tuberculosis with oral and oesophageal candidiasis accompanied by characteristic immunological changes with evidence of infection with human T cell lymphotropic virus III.

Treatment of this patient was complicated by an unusual drug interaction between rifampicin and ketoconazole, leading to subtherapeutic serum concentrations and poor clinical response to treatment. Intravenous treatment was more effective than oral treatment. This drug interaction should be studied in greater detail as ketoconazole and rifampicin may be used together to treat patients with candidiasis and infection with M tuberculosis.

GRANGE, JM, et al

Subdivision of Mycobacterium tuberculosis for epidemiological purposes: a seven year study of the 'Classical' and 'Asian' types of the human tubercle bacillus in South-East England

Journal of Hygiene, 1985, Vol.94(1), p9-21

Human strains of Mycobacterium tuberculosis were divided into the 'Classical' and 'Asian' types according to their sensitivity to thiophen-2-carboxylic acid hydrazide. The isolation of these two types in South-East England was studied during a seven-year period (1977-1983). The differences in behaviour of the two types of human tubercle bacilli in this country, needs continued bacteriological surveillance, and also to determine whether the nature of the host-pathogen interaction varies according to the type of bacillus.

WALES, JM, et al

Tuberculosis in a primary school: the  
Uppingham outbreak

British Medical Journal, 12 October 1985, p1039-40

Primary tuberculosis in white children in the United Kingdom is uncommon. This view was supported by a survey by the Medical Research Council of notifications of tuberculosis. An outbreak of tuberculosis in a primary school in Leicestershire that occurred during the period of this survey is described. The children affected were all white, lived in a semirural community, and attended a local primary school.

### 6.3 CHOLERA

YOUNG, DB and BROADBENT, DA

Effect of extracellular protease production on bacteriophage  
sensitivity of *Vibrio cholerae*

Transactions of the Royal Society of Tropical Medicine  
and Hygiene (1985), Vol.79(5), p687-689

The effect of varying levels of extracellular protease production on the bacteriophage type of *Vibrio cholerae* 1621 serotype 01, biotype E1 Tor, has been investigated. It has been shown that the production of high levels of exoprotease can alter the apparent type of the strain by rendering it insensitive to infection by a number of bacteriophages. Prevention of a productive infection appears to be due to altered surface characteristics rather than to specific damage to the bacteriophages. Such altered surface characteristics may be due to auto-digestion. The importance of this observation to epidemiological studies of *V. cholerae* is noted and discussed.

### 6.4 DIARRHOEA

MATHAN, M and MATHAN, VI

Local Shwartzman reaction in the rectal  
mucosa in acute diarrhoea

Journal of Pathology, (1985) Vol.146(3), p179-187

A microvascular lesion characterized by endothelial and platelet damage leading to intravascular coagulation, thrombosis and vascular dehiscence with haemorrhage was found in capillaries and venules in the rectal mucosal lamina propria of adults with acute diarrhoea. The lesion morphologically resembled the local Shwartzman reaction. There was no correlation between the

prevalence of the vascular lesion and the presence of recognized enteric pathogens, but there was a significant correlation with the clinical severity of the illness. It is suggested that this vascular lesion could be the result of the failure of the epithelioluminal barrier in the colon and it may also be one of the determinants of the clinical severity of illness in adults with acute diarrhoea.

## 6.5 SALMONELLOSES

COOK, GC

Management of typhoid

Tropical Doctor, (1985), Vol. 15(4), p154-159

Typhoid fever is still a major problem in developing third world countries where socioeconomic conditions and standards of hygiene are still well below standard. Prophylaxis is far from satisfactory. However, recent developments using live oral vaccines are encouraging. It is clear that individual cases must be assessed on their merit.

EASTER, MC and GIBSON, DM

Rapid and automated detection of salmonella by electrical measurements

Journal of Hygiene (1985), Vol.94(3), p245-262

A rapid method for determining the presence of salmonella in food is described. It consists of pre-enrichment in buffered peptone water modified by the addition of dulcitol and trimethylamine oxide, followed by selective enrichment in a selenite-cystine broth with similar modifications. Changes in the conductance of the selective enrichment broth are monitored continuously using a suitable impedimetric instrument. The conductance method is simple and easy to use, gives rapid results and involves less media and subculturing than is required for traditional methods.

FARTHING, M J G

Receptors and recognition mechanisms in intestinal infection

Transactions of the Royal Society of Tropical Medicine and Hygiene (1985), Vol.79(5), p569-576

Commensal and pathogenic micro-organisms of the alimentary tract exhibit outstanding specificity with respect to host species, phenotype and age, and often to the type and location of epithelial cells within the gut. Specificity in attachment to the gut is achieved most commonly by ligand-receptor interactions

at the pathogen-epithelial interface. Similar molecular events are important in the production of diarrhoea. Identification and characterization of processes will continue to have, important implications for the biological control of enteric infection, particularly with respect to vaccine development.

HOLT, P

Severe salmonella infection in patients with reduced gastric acidity

The Practitioner (1985), Vol.229(1409), p1027-1030

In a retrospective study of 199 adults with acute salmonella infections, the morbidity and mortality was greatest in those patients who had undergone gastric surgery. There was a similar tendency to severe disease in patients with pernicious anaemia and undergoing therapy with  $H_2$  receptor antagonists. It is suggested that antibiotic therapy may be advisable in patients with hypochlorhydria who contract salmonellosis.

LINKLATER, KA, et al

Salmonellae in sewage sludge and abattoir effluent in South-east Scotland

Journal of Hygiene (1985), Vol.94(3), p301-307

A survey into the prevalence of salmonella organisms in sewage in the Borders Region of South-east Scotland is described. Spreading of sewage sludge on to pastureland presents little risk to livestock provided the recommended guidelines are followed. Nevertheless, Salmonella typhimurium phage type 12, identified in sewage, was also recovered from animals in incidents on 11 farms, including 4 which had received sludge from this source. A further 48 isolates (13 serotypes) were obtained from the parallel monitoring of abattoir effluents, indicating that the background level of salmonella infection in the animal population appears to be low in comparison to that in humans.

NEWELL, DG, et al

The virulence of clinical and environmental isolates of Campylobacter jejuni

Journal of Hygiene (1985), Vol.94(1), p45-54

The virulence of Campylobacter jejuni and C. coli isolated from various water sources was compared with that of clinical strains by in vitro assays of adhesion, invasion and cytotoxicity to HeLa cells. Variation in degree of attachment was observed, but unrelated to strain source. However, water strains were less invasive and less cytotoxic to HeLa cells than clinical strains as shown by immunofluorescence and electron microscopy. The enhanced virulence of the clinical isolates, possibly induced by passage, was confirmed by colonization tests on infant mice.

## 6.6 OTHER BACTERIAL DISEASES

WATSON, GN

The assessment and application of a bacteriocin typing scheme for *Clostridium perfringens*

Journal of Hygiene (1985), Vol.94(1), p69-79

Isolates of *C. perfringens* from a wide range of sources were screened for their ability to produce bacteriocins. A much greater proportion of the strains from food poisoning outbreaks was bacteriocinogenic than were isolates from human and animal infections, various foods and the environment. The relevance of these findings to the occurrence of *C. perfringens* food poisoning is discussed.

## 7. DISEASES CAUSED BY SPIROCHAETES

### LEPTOSPIROSIS

GILL, ON, et al

The risk of leptospirosis in United Kingdom fish farm workers: Results from a 1981 serological survey

Journal of Hygiene (1985), Vol.94(1), p81-86

Less than one per cent of serum samples taken from 257 fish farmers in 1981 had agglutinating antibodies to strains of *Leptospira interrogans* of serogroup Icterohaemorrhagiae at a titre of 30 or greater. Compared with the results from other serological surveys, this agglutinating antibody prevalence suggests that fish farming does not have a high occupational risk for leptospirosis. No one particular risk factor within fish farming could be reliably identified and therefore recommendations to reduce the risk can only be general.

## 8. NUTRITIONAL DISEASES

### MARASMUS

BARLTROP, D and SANDHU, BK

Marasmus - 1985

Postgraduate Medical Journal (1985), Vol.61(720), p915-923

The aim of this paper is to review the current state of knowledge concerning the pathophysiology, aetiology, clinical presentation and treatment of marasmus in the context of it being considered as one of a spectrum of syndromes produced by severe protein energy malnutrition (PEM).

FRANKS, AJ and JURGENSEN, C

Nutrition and health in the first year of life on a Pacific atoll. Observations on Abemama Atoll, Central Pacific

Transactions of the Royal Society of Tropical Medicine and Hygiene (1985), Vol.79(5), p681-684

The growth of 50 children on a coral atoll has been studied during their first year of life. Initially the population median weight rose above the international norm, but later declined, resulting in a median weight at 12 months below this norm. Data on age of introduction of foods, diarrhoeal illness and general morbidity indicated an association between growth faltering and episodes of fever between four and 12 months but no association with diarrhoea. Records of village or home treated illness highlight the discrepancies between village and health service based records.

NOAH, ND

Food poisoning

British Medical Journal, 28 September 1985, p879-883

Although this article deals mainly with microbiological food poisoning other causes of food poisoning and acute non-food-borne infectious gastroenteritis will be considered where relevant in the differential diagnosis.

## 9 DRUGS

MACKENZIE, CD

Diethylcarbamazine: A review of its action in onchocerciasis, lymphatic filariasis and inflammation

Tropical Diseases Bulletin (1985), Vol.82(10), pR1-R37

Diethylcarbamazine (DEC) has been used in the treatment of human and veterinary parasitic diseases, particularly filarial infections. DEC has also been considered as an agent of the treatment of allergic conditions, and is currently experiencing a revival as a reagent useful in research into the mechanisms of allergic and acute inflammatory reactions. The purpose of this review is to consider the current status of DEC as a chemotherapeutic agent for onchocerciasis and other filarial conditions, and to discuss this status in light of the present knowledge of its action in acute inflammatory processes and the host's immune responses to helminths.

RICHARDS, HC

Oxamniquine-a drug for the Third World

Chemistry in Britain (1985), Vol.21(11), p1001-1005

Schistosomiasis is one of the most debilitating and widespread diseases of the Third World. It is the most prevalent waterborne disease in rural areas, and is second only to malaria in its harmful social and economic effects. Also known as bilharzia or 'snail fever', it is now endemic in 74 countries. It is thought that 200 million people are infected.

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A Short Textbook of PREVENTIVE MEDICINE  
for the Tropics. 2nd ed.  
Hodder and Stoughton, 1984, £6.95  
ISBN 0 340 33818 0

This book is firmly established as a major text for students of tropical medicine and as an invaluable source of reference for other practising members of the health professions. The expertise of the two authors, both leading authorities, is here distilled in a practical, concise and straightforward manner. Because of important advances in knowledge of causes and treatment of tropical disease the book has been extensively revised for this new edition. Chemotherapy has recently made vast strides and so information on treatment has been completely updated. There has been some reorganisation of the text, considerable rewriting generally and expansion in the coverage of certain subjects. The chapter on nutritional disorders is completely new and that on the health services rewritten with emphasis on primary medical care.

JELLIFFE, DB ed.

Child Health in the Tropics  
A practical handbook for health personnel  
5th ed. Edward Arnold, 1985  
ISBN 0 7131 4438 6

This clearly written and simply presented book provides a wide but pertinent range of information for all medical and paramedical personnel working in the tropics. Practical advice is given on all major problems that medical and primary care health workers are likely to encounter.

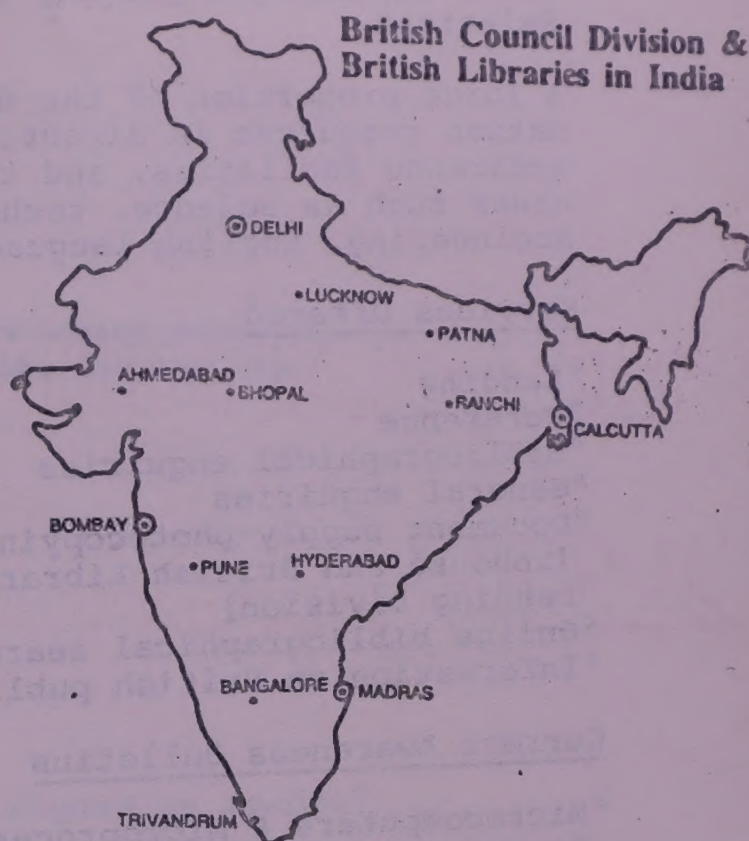
New ideas on immunization, and the treatments to combat the resistance of some malarial parasites to conventional antimalarials, are covered together with the use of oral drugs to treat schistosomiasis, procedures for oral rehydration and assessment and management of malnutrition.

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